



**Department of  
Veterans Affairs**

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# **News Release**

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## **VA Research -- Innovations for Veterans and the Public**

The research program begun after World War II by the Veterans Administration -- now the Department of Veterans Affairs (VA) -- was designed to enhance patient care by affiliating VA medical centers with medical schools. In affiliated hospitals, physicians care for patients, teach medical students and residents, and engage in their own research. Today VA research continues its proud history of improving medical care for veterans and the general population, while helping recruit talented clinicians to VA. More than half of U.S.-trained physicians receive some of their training at a VA medical center.

The VA research program consists of four distinct research services. Medical Research Service supports basic and clinical studies that advance knowledge leading to improvements in the prevention, diagnosis, and treatment of diseases and disabilities. Rehabilitation Research and Development focuses on promoting healing and improving the quality of life for disabled veterans in need of prosthetic devices, sensory aids and mobility assistance. Health Services Research and Development examines the impact of organization, management and financing of health-care services on the delivery, quality, cost and outcomes of care. The Cooperative Studies program conducts multi-hospital, randomized clinical trials for new medical therapies.

Seventy-five percent of VA researchers are practicing physicians, and their dual role allows rapid application of research results to patient care. Targeted programs include areas of particular interest to veterans, such as aging, environmental exposures of Gulf War veterans, substance abuse, health issues of women veterans, AIDS, and PTSD and other mental health problems. VA investigators have made the Department a world leader in research directed toward the elderly, the HIV infected, those suffering mental effects of war and other trauma, and war-wounded veterans requiring prosthetic devices and sensory assistance aids.

### **Past Accomplishments**

VA physicians and scientists developed practices that have revolutionized medicine. They pioneered tuberculosis treatment, developed the cardiac pacemaker, and contributed to development of the high-tech diagnostic procedures of computerized axial tomography (CAT), magnetic resonance imaging (MRI) and magnetic source imaging. The first successful drug treatments for high blood pressure and schizophrenia were pioneered by VA researchers, as were kidney and home dialysis techniques. The Seattle Foot, created by VA, allows amputees to walk, run and jump.

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## **Research 2/2/2/2**

In 1977, the Nobel Prize for Medicine went to two VA physicians -- Dr. Rosalyn S. Yalow of the Bronx VA Medical Center, who was recognized for her landmark work in the development of the radioimmunoassay; and Dr. Andrew V. Schally of the New Orleans VA Medical Center, for his research on brain hormones.

In 1998, Ferid Murad, M.D., Ph.D., shared the Nobel Prize in Medicine in part for research he conducted while at the Palo Alto VA Medical Center. Studies by Dr. Murad, now at the University of Texas Medical School in Houston, have been instrumental in illuminating the role of nitric oxide in body functions, including the relaxation of blood vessels and regulation of blood pressure.

### **Scope of Research Efforts**

In FY 2000, estimated funding for VA research was \$321 million. An additional \$344 million from VA's medical care account supports research efforts. Funding from the National Institutes of Health and other foundations, combined with supporting funds from pharmaceutical companies, contributed another \$490 million to VA research. VA currently conducts more than 15,000 research projects at 115 VA medical centers, and its Career Development program provides young scientists an opportunity to develop skills as clinician-researchers.

### **Recent Research Advances**

- VA researchers recently conducted the largest study ever on colonoscopy for patients without symptoms. Researchers found in colonoscopy examinations of such patients who ordinarily would have had a sigmoidoscopy screening, at least third of the lesions found would have been missed. Sigmoidoscopy reveals only the lower portion of the colon's lining.
- A recent VA research achievement may lead to the development of improved artificial livers and better treatments for liver disease. San Diego-based researchers discovered they could stimulate or inhibit growth in mouse liver cells by altering a specific gene. They believe the gene may work as a "switch" to increase cell growth in damaged livers or to stop the growth of tumors. Their discovery presents a new target for therapies aimed at the liver and may offer insights for treating disorders in other organs.
- VA scientists in Minneapolis discovered that a natural chemical messenger and a neurotoxin could shut down neurons associated with chronic pain while leaving intact those needed for a normal pain response. Their research has progressed to development of a model for treating the intense pain experienced by bone cancer patients and may lead to new, more effective therapies.
- Researchers at the VA Medical Center in West Haven, Conn., found that a specific sodium channel, the molecular "battery" that produces electrical impulses in nerve

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### **Research 3/3/3/3**

cells, occurs in cells of brains affected by MS but not in those without neurological disease. Their work could revolutionize the treatment of MS.

- In San Diego, VA researchers identified a molecular marker that may predict heart attack or ischemia. Now they are building upon that research by studying whether such attacks can be prevented by increasing levels of a protein that stimulates blood vessel growth and helps repair damaged tissue.
- A VA research initiative involving microcomputer technology will modernize the design of electric-powered upper limb prostheses. VA researchers are developing a position-sensitive controller that will improve functional performance, fitting flexibility, and ease of operation. The new controller provides sensory feedback from the prosthesis to the amputee, thus giving the amputee a better "feel" for the position of his prosthetic limb in space.
- VA's expertise in audiology played a critical role in the first major clinical trial of hearing aids. A study, conducted at eight VA medical centers in collaboration with the National Institute on Deafness and Other Communication Disorders, showed that hearing aids are beneficial in both quiet and noisy environments. The results may enable primary care doctors to provide better assistance to the estimated 28 million Americans -- including about a third of those age 65 or older -- suffering from hearing loss.
- A group of VA scientists in Palo Alto is the first to show that robot-assisted therapy is more effective than conventional treatment for restoring upper-limb movement following stroke. The therapy produced significant improvements in strength and motor function, demonstrating that robots may help provide intensive, interactive training for patients recovering from strokes.

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